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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,410	12/03/2003	Norbert Weghaus	WEGHAUS1	4749

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BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/725,410

Applicant(s)

WEGHAUS ET AL.

Examiner

Sara Addisu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 and 30 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **1/18/07** has been entered.

- Currently, claims 1-6 are pending in this application.

The "Declaration" and pictures submitted 1/18/07, Examiner has taken them into consideration but is insufficient to overcome the rejection of claims 1-6 based upon 35 U.S.C. 103(a), as set forth in the last Office action because:

It states that the claimed subject matter solved a problem that was long standing in the art. However, there is no showing that others of ordinary skill in the art were working on the problem and if so, for how long. In addition, there is no evidence that if persons skilled in the art who were presumably working on the problem knew of the teachings of the above cited references, they would still be unable to solve the problem. See MPEP § 716.04.

The pictures submitted do not show a staggered broached side flanks, however, that does not prove that the process used to cut said profile does not use teeth with one cutting edge and another opposing guiding edge (with no cutting ability).

Furthermore, the declaration does not give details of how sides could have that smooth radiused shape when according to the claim and declaration, no material is being removed from the sides.

Drawings

The drawings are objected to because:

- it is not clear from the Specification and drawings how a broach cutting teeth that cuts only on its bottom side and having non-cutting sides could while having a shape as shown in Figure 3, could form smooth profiles 15 and 16 (i.e. shouldn't the profile of 15 and 16 have a staggered shape since only the bottom side of each teeth peels off chips at the bottom of the flank). It remains unclear to the Examiner how the sides could have that smooth radiused shape when according to the claim, no material is being removed from the sides.
- Claim 1 (page 4, lines 1-3) and Specification submitted 1/18/07 (page 2, lines 4-6) recites "a bottom cutting blade relief surface which is a single curved plane extending between the first and second sides...". Referring to figure 3 of the instant application, it appears as though teeth 21a-21e have a bottom cutting blade with a single curved plane while teeth 21f has

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a bottom cutting blade with a straight plane (no curve). Furthermore, figure 2 of the instant invention shows the profile (12) formed by the bottom cutting blades being perpendicular therefore, it is not clear how a bottom cutting blade with a single curved plane could form such a profile. For the purpose of this Office Action, Examiner is interpreting it to have no curve.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

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The amendment filed 1/18/07 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Specification submitted 1/18/07 (page 2, lines 4-5) recites "...a bottom cutting blade relief surface in the form of a single curved plane and". Referring to figure 3 of the instant application, it appears as though teeth 21a-21e have a bottom cutting blade with a single curved plane while teeth 21f has a bottom cutting blade with a straight plane (no curve). Furthermore, figure 2 of the instant invention shows the profile (12) formed by the bottom cutting blades being perpendicular therefore, it is not clear how a bottom cutting blade with a single curved plane could form such a profile.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 remains rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1, page 3, lines 14+ claims first side of the teeth having guide edges without cutting ability and the second sides being relieved surfaces that do not touch the profiled flank the second side face. Even with the explanation given in the remarks filed 6/20/06 and 1/18/06 as well as Declaration & pictures filed 1/18/07, it is not clear from the Specification and drawings how a broach cutting teeth that cuts only on its bottom side and having non-cutting sides could while having a shape as shown in Figure 3, could form smooth profiles 15 and 16 (i.e. shouldn't the profile of 15 and 16 have a staggered shape since only the bottom side of each teeth peels of chips at the bottom of the flank). It remains unclear to the Examiner how the sides could have that smooth radiused shape when according to the claim, no material is being removed from the sides.

Claim 1, page 4, lines 1-3 recites "a bottom cutting blade relief surface which is a single curved plane extending between the first and second sides...". Referring to figure 3 of the instant application, it appears as though teeth 21a-21e have a bottom cutting blade with a single curved plane while teeth 21f has a bottom cutting blade with a straight plane (no curve). Furthermore, figure 2 of the instant invention shows the

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profile (12) formed by the bottom cutting blades being perpendicular therefore, it is not clear how a bottom cutting blade with a single curved plane could form such a profile.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, page 3, lines 14+ claims first side of the teeth having guide edges without cutting ability and the second sides being relieved surfaces that do not touch the profiled flank the second side face. Even with the explanation given in the remarks filed 6/20/06 and 1/18/06 as well as Declaration & pictures filed 1/18/07, it is not clear from the Specification and drawings how a broach cutting teeth that cuts only on its bottom side and having non-cutting sides could while having a shape as shown in Figure 3, could form smooth profiles 15 and 16 (i.e. shouldn't the profile of 15 and 16 have a staggered shape since only the bottom side of each teeth peels of chips at the bottom of the flank). It remains unclear to the Examiner how the sides could have that smooth radiused shape when according to the claim, no material is being removed from the sides.

Claim 1, page 4, lines 1-3 recites "a bottom cutting blade relief surface which is a single curved plane extending between the first and second sides...". Referring to

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figure 3 of the instant application, it appears as though teeth 21a-21e have a bottom cutting blade with a single curved plane while teeth 21f has a bottom cutting blade with a straight plane (no curve). Furthermore, figure 2 of the instant invention shows the profile (12) formed by the bottom cutting blades being perpendicular therefore, it is not clear how a bottom cutting blade with a single curved plane could form such a profile. For the purpose of this Office Action, Examiner is interpreting it to have no curve.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, as best understood, are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Psenka (U.S. Patent No. 2,683,919), in view of Applicant's Admitted Prior Art (AAPA).

Psenka teaches an internal broach (10) for internally broaching tooth space (profiles) (30 or 40), defined by a bottom and profile flanks. Psenka also teaches a

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broach having a shank (with central longitudinal axis) leading in a direction of broaching and a series of circular [annular] blades (toothed sections, therefore having a distance (i.e. pitch between the teeth) with several rows of broach cutting teeth (bottom cutting blades as well as first and second sides allocated to the flanks) disposed successively counter to the direction of broaching and parallel to the longitudinal axis (see figure 1 & 3), to form the desired depth and shape ('919, Col. 3, lines 1-12). Psenka also teaches cutting teeth (E-G) having a bottom-cutting blade ('919, Col. 4, lines 10-12), side (72) having a single curved plane with guiding function (also admitted by Applicant's remark, page 10, lines 4-5) that form profile flanks (e.g. 52) and a non-cutting relieved side with a single curved plane (74 at the vicinity of pitch a) on the opposite side of side (72) and form flanks in the vicinity of the pitch ('919, figure 5 and Col. 4, lines 16-26). The bottom cutting blade transitions into a relieved side surface (74), therefore the relieved side surface does not rest on the profile flank until the engagement with the bottom-cutting blade. The relieved surface (74) of the second side never touches the profile flank. Psenka also teaches the bottom cutting blades being designed for cutting over a full profile width ('919, Col. 4, lines 52-55). Additionally, the guide edges are unrelieved surfaces (therefore having no flank pitch) (Col. 6, lines 4-6). Regarding claim 4, Psenka teaches in figure 1, broach cutting teeth disposed in rows (parallel to the central longitudinal axis) as well as side by side relative the direction of broaching such that they form helically extending chip spaces with respect to the central longitudinal axis. Regarding claims 3, 5 and 6, Psenka teaches a broach designed to cut helical teeth,

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tooth spaces, splines or splineways, when drawn through a hole in a work piece ('919, Col. 1, lines 1-4).

However, Psenka fails to teach the bottom surfaces of the bottom-cutting blade being a relieved. Applicant's Admitted Prior Art (AAPA) teaches that it is customary for the bottom cutting blades to have a relief surface (Specification Page 10, lines 8-9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Psenka invention to have a relieved bottom-cutting blade, as taught by AAPA, because AAPA teaches that it is customary for the bottom cutting blades to have a relief surface.

Response to Arguments

Applicant's arguments filed 1/18/07 have been fully considered but they are not persuasive.

Regarding Applicant's argument (page 7, last paragraph) that "Applicant respectfully traverses the examiner's repeated rejection based on the indication that it is unclear how the broach cutting teeth that only cut on their bottom sides and non-cutting sides can form profiles 15 and 16 on the same grounds provided in Applicant's June 20, 2006 response. If the examiner wishes to further pursue this rejection Applicant requests that the Examiner explicitly respond to Applicant's June 20, 2006 rebuttal, hereby incorporated by reference, especially with regard to col. 4, lines 10-16 of Psenka cited by Applicant.", Examiner respectfully points out that Psenk teaches "the teeth of

the second and following series cut primarily with their tops", while the first group of teeth do the cutting of the slot to establish "true guiding action" ('919, col. 2, lines 40+).

Furthermore, Examiner wants to bring to Applicant's attention USP 6,918,716 (same inventor). This prior art discloses the same method of broaching to get the final profile which is like the instant invention except it is accomplished with cutting teeth having bottom cutting edge, one side guiding flank (with no cutting ability) (eg. 25g) and another opposing side with partial cutting flank (32g) followed by relieved surface (339) ('716, figure 12). Unlike the instant invention, both sides are not non-cutting sides, but are able to achieve the same profile as the instant invention, which raises the same issue: how could the sides of the broached workpiece have smooth radiused shape when according to the claim, no material is being removed from the sides.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
(571) 272-6082

SA 3/30/07

Monica S. Carter
MONICA CARTER
SUPERVISORY PATENT EXAMINER